

## EXPRESSION OF EBV LATENT MEMBRANE PROTEIN 1 (LMP1) IN IRAQI WOMEN WITH CERVICAL CARCINOMA

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**ABSTRACT :** The design of this paper is to find the possible correlation of Epstein Barr virus infection in a group of Iraqi women with cervical carcinoma through detection of Latent Membrane Protein 1 (LMP1) in these cervical tissues. Paraffinized blocks of two groups were included. The first sample of 30 cervical carcinomatous tissues and 15 biopsies from an apparently normal cervical tissues. All the samples were sectioned on a positive charged slides with 4 mm – thickness then submitted for immunohistochemical (IHC) staining to detect viral LMP1 expression. Sixty three percentage (19 out of 30) of the studies group showed positive overexpression as shown in with a significant association of the expression with cervical cancer with a significant association ( $p = 0$ ). The infection with EBV may be a possible causative agent affected the development of cervical cancer. Further studies with large samples are recommended.

**Key words :** Epstein Barr Virus, LMP1, immunohistochemistry, cervical cancer.

### INTRODUCTION

Cervical malignancy positioned as the fourth most prevalent disease among women around the world and it was the most widely recognized female cancer in many low-income societies (Ferlay *et al*, 2012). The early detection programs of cervical cancer is the most efficient screening comparing with other cancers, as it was able to detect pre-cancerous lesions in the cervix by using Pap smear, which can also detect high-risk types of HPV that are responsible of 70% cervical tumors (WHO, 2012; Nwabichie *et al*, 2017).

Globally, infectious agents are responsible of the development 20% of the all cancers including Cervical cancer in which the vast majority of cases are attributed the viral infection (mainly high-risk types of HPVs) (Vedham *et al*, 2015).

Epstein-Barr virus, which is one of the most common human viruses, belongs to the herpesvirus family. The EBV is the most interested member of Gamma herpesviruses due to its wider spreading infection in more than 90% of the adult population globally (Avgil and Ornoy, 2006; Tsai *et al*, 2017).

Although, the Epstein-Barr virus (EBV) is a causative for a persistent asymptomatic infection, it is also the etiology of two premalignant tumors and about nine B

and non-B cell tumors with a worldwide burden of 200,000 new cancers per year (Shannon and Rickinson, 2019). Previous data indicate suggested involvement of infectious agents other than HPVs in the cervical carcinogenesis and among these etiologies, EBV considered one of the most relevant (de Lima *et al*, 2017).

For all above, this study was designed to find the possible correlation of EBV infection with the Iraqi women with cervical carcinoma through detection of Latent Membrane Protein 1 (LMP1) in these cervical tissues.

### MATERIALS AND METHODS

Two groups were used in this study, the apparently healthy group of fifteen archival blocks and the study group of thirty archival tissues of cervical cancer. All these samples were collected from different governmental and private laboratories in Baghdad.

For each block, two slides with 4  $\mu$ m thickness were used, for a routine hematoxylin and eosin staining and the other on a positively-charged slide for immunohistochemical procedure using anti-EBV LMP1 and staining kit from (ABCAM) company.

After dewaxing and rehydration, the endogenous peroxidase activity and non-specific binding were blocked by incubation with peroxide block and protein block ready